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FIG. 1 Intercalated Natural graphite Flakes

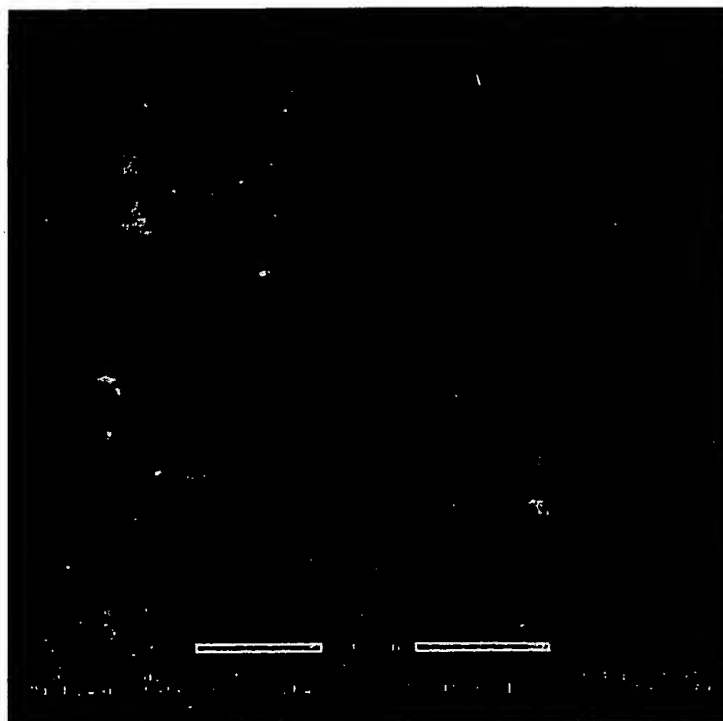


FIG. 2 Expanded Natural graphite Flakes by Microwave

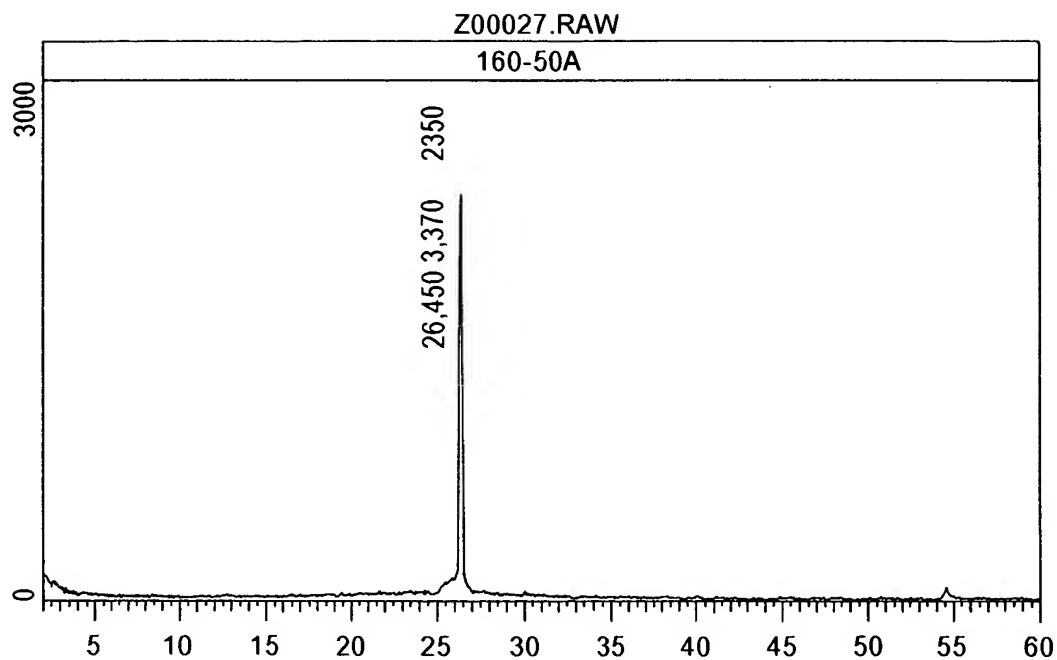


FIG. 3 X-Ray Diffraction Pattern of Intercalated Natural Graphite

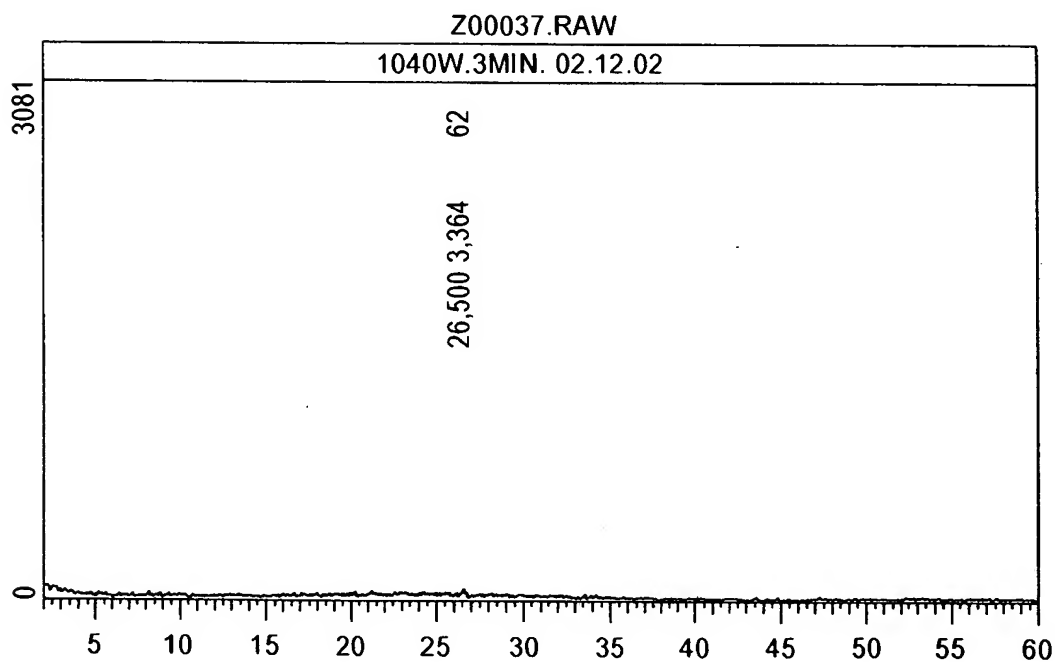


FIG. 4 X-Ray Diffraction Pattern of Intercalated Natural Graphite

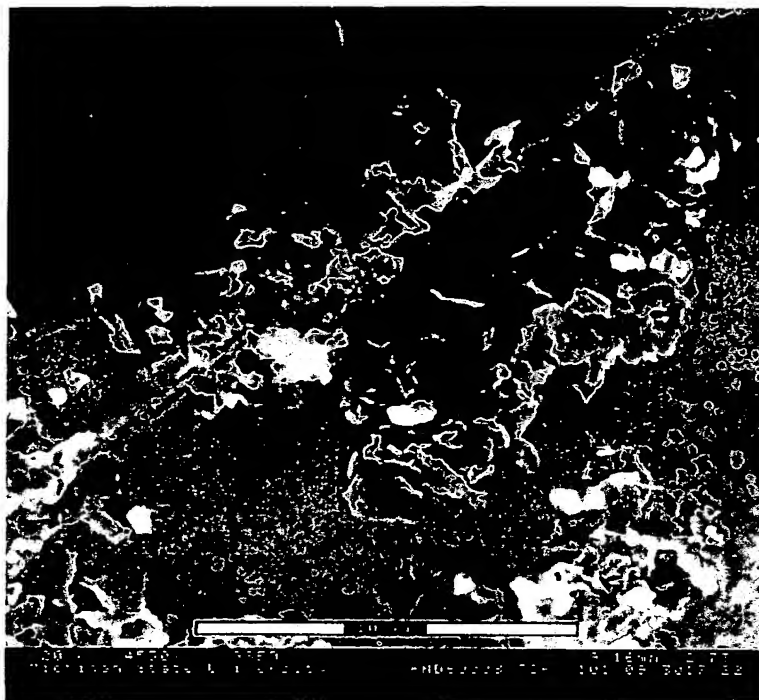


FIG. 5 Exfoliated Graphite Platelets

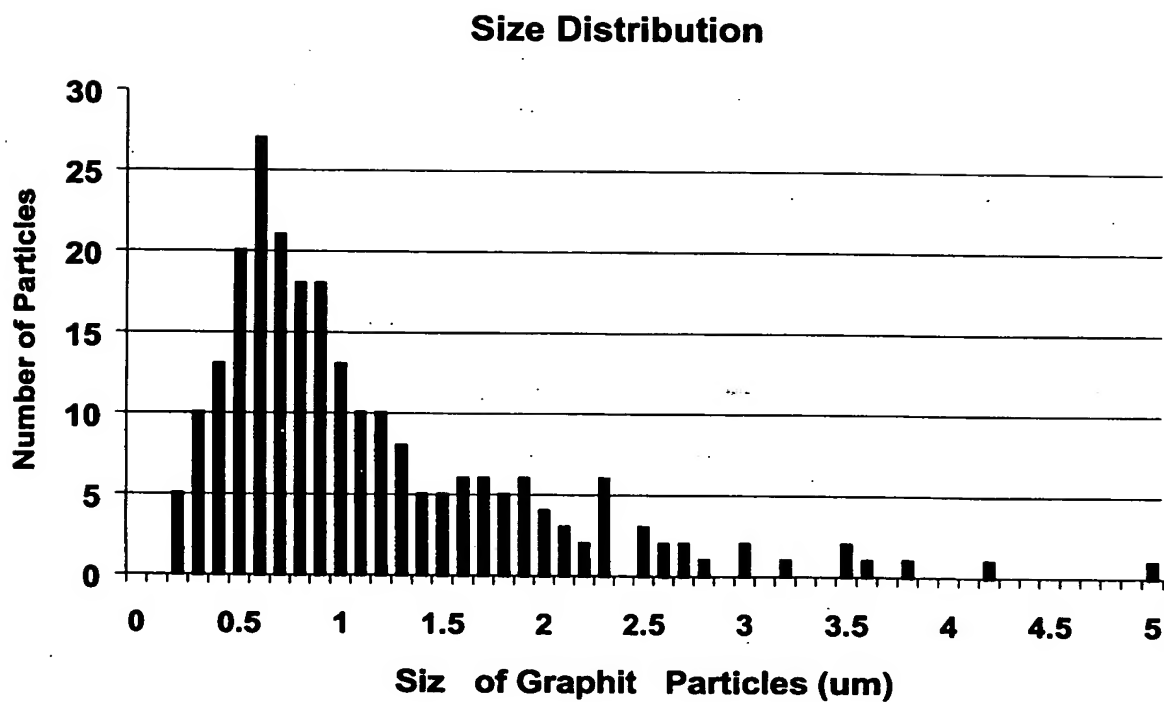


FIG. 6 Size Distribution of Exfoliated Graphite Platelets

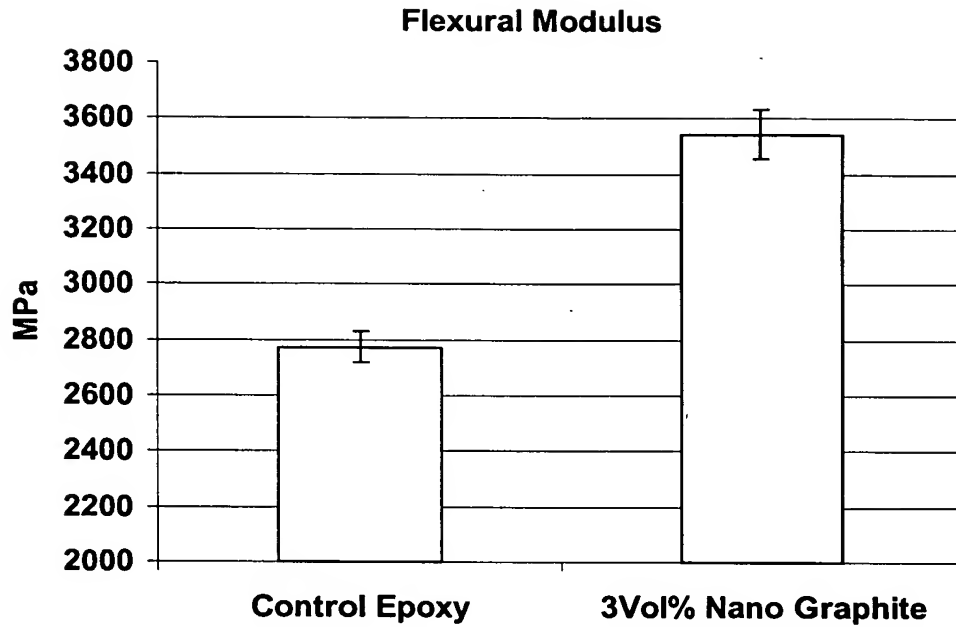


FIG. 7 Flexural Modulus of Control Epoxy and Graphite Nanoplatelets reinforced Composite

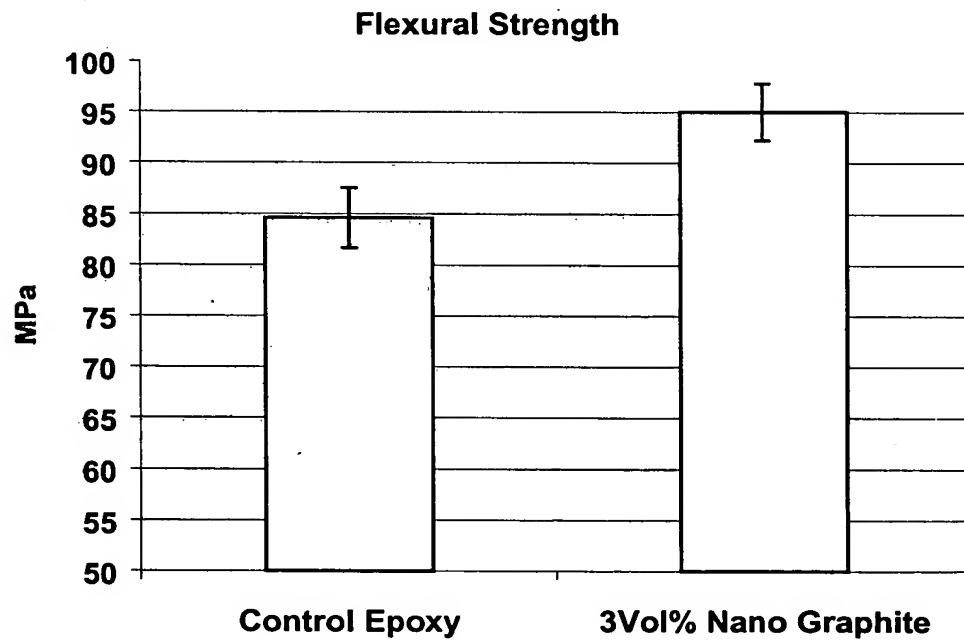


FIG. 8 Flexural Strength of Control Epoxy and Graphite Nanoplatelets reinforced Composite

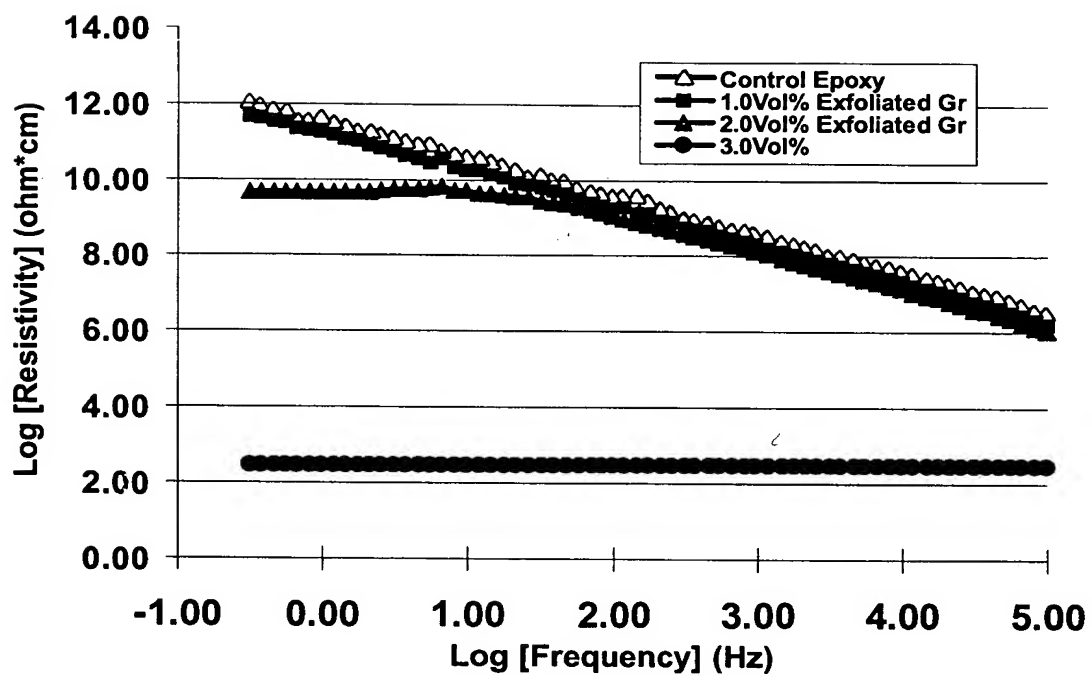
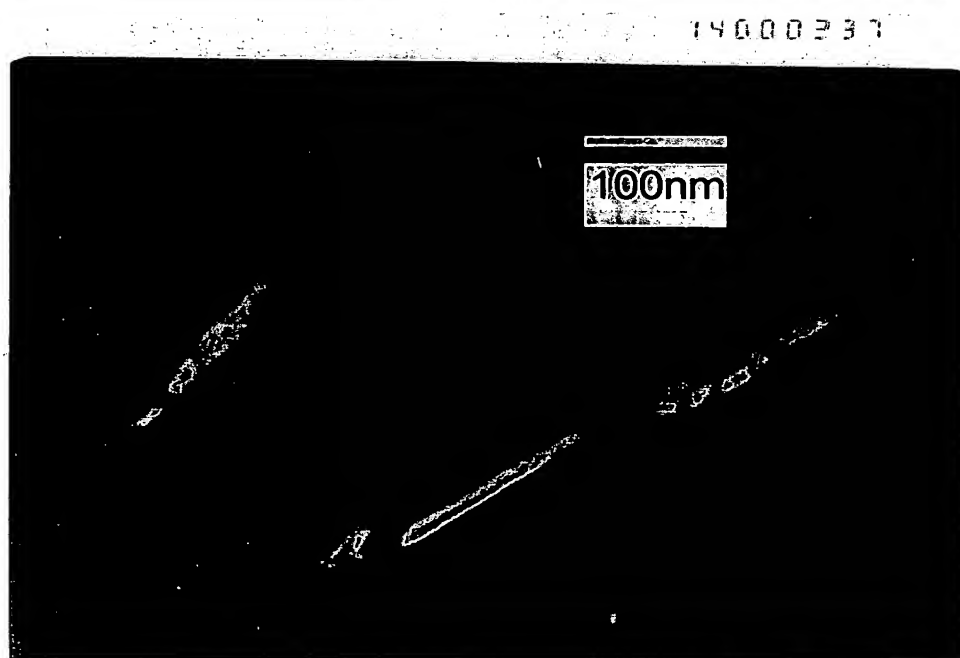
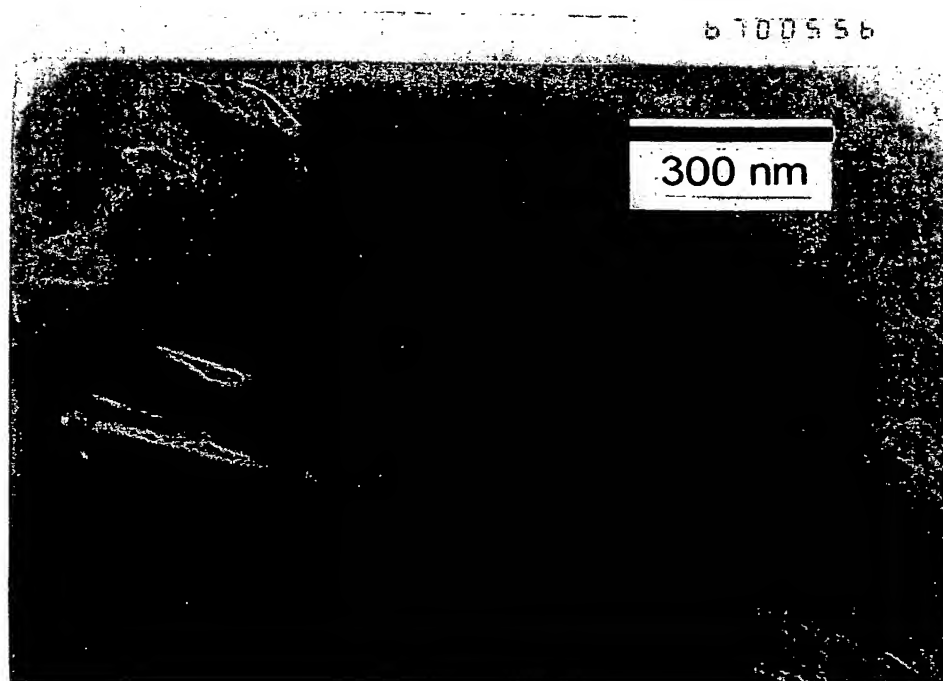


FIG. 9 Resistivity of Control Epoxy and Graphite Nanoplatelets reinforced Composites

FIG. 10A



TEM Images of Graphite Nanoplatelets in Polymer Matrix

FIG. 10B

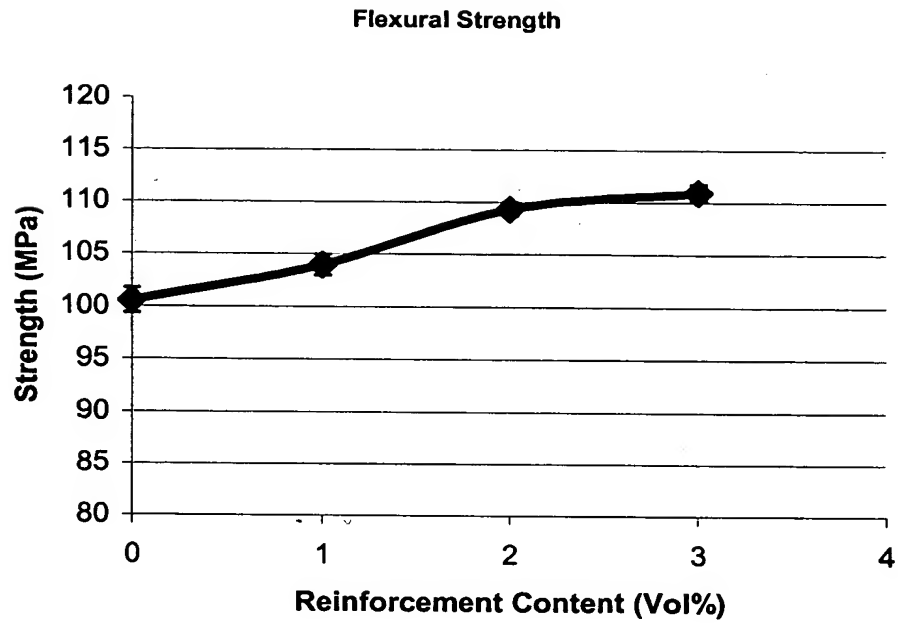


FIG. 11

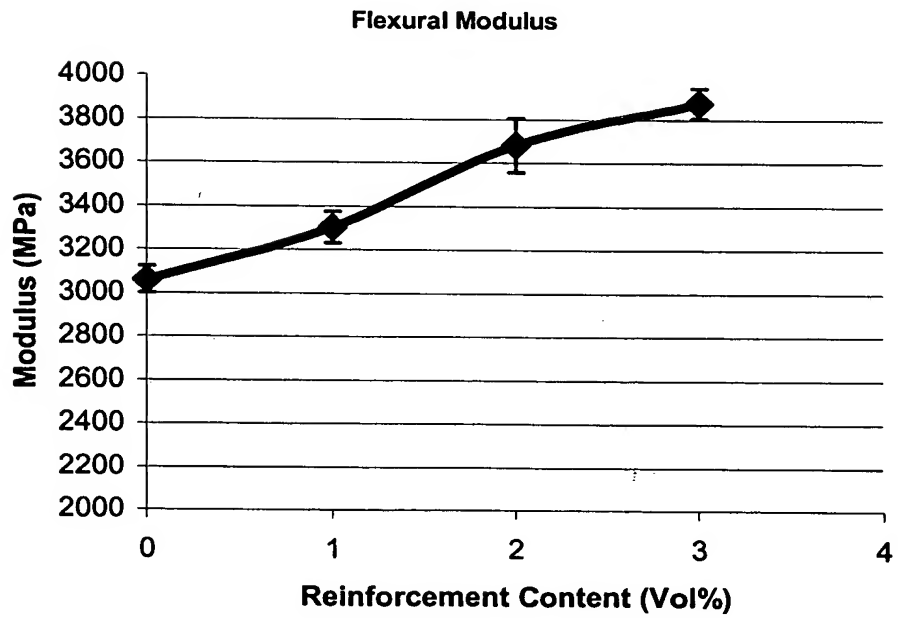


FIG. 12

(a) Effect of Acrylamide Grafting

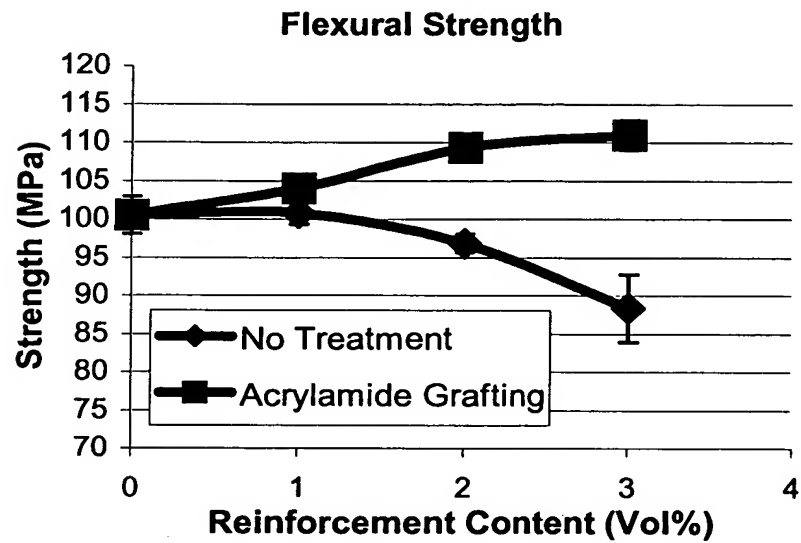


FIG. 13

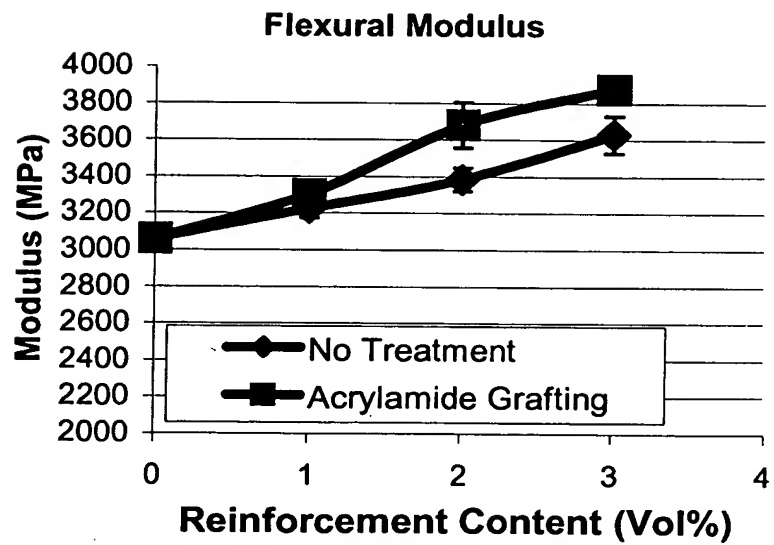


FIG. 14

(b) Effect of Exfoliation Method and Milling

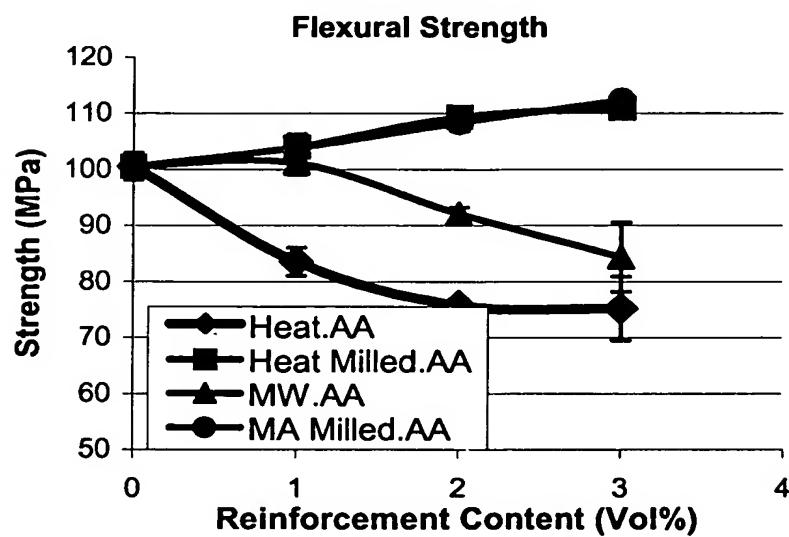


FIG. 15

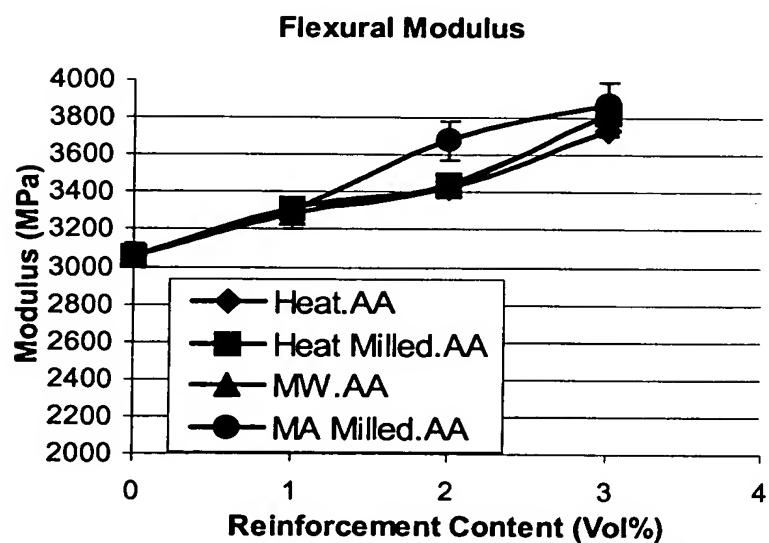


FIG. 16

(c) Comparison to Other Carbon Materials

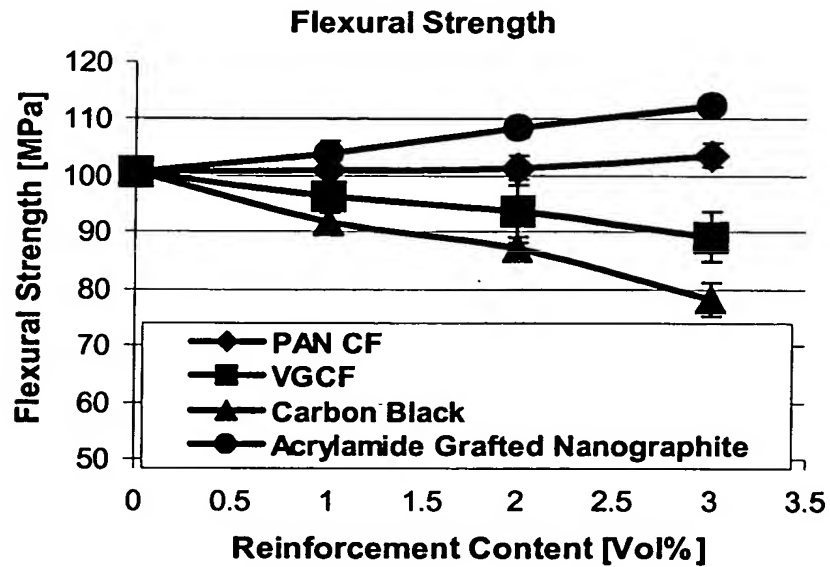


FIG. 17

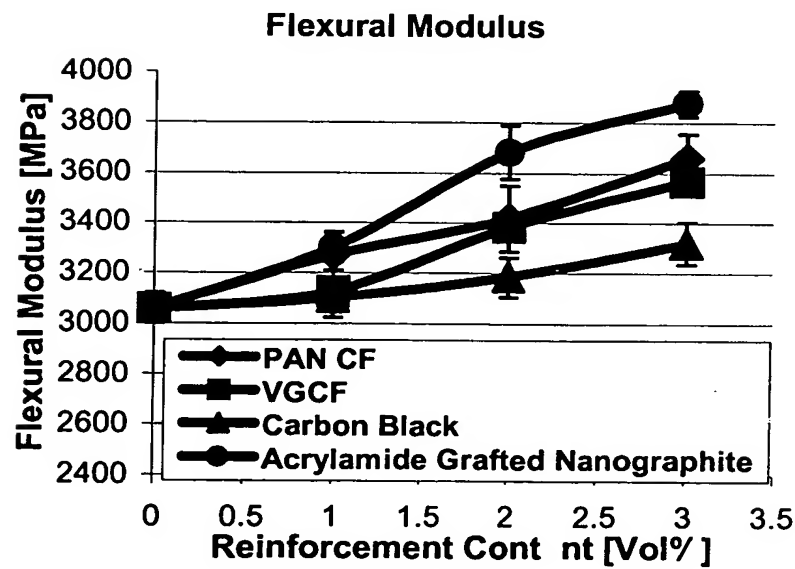
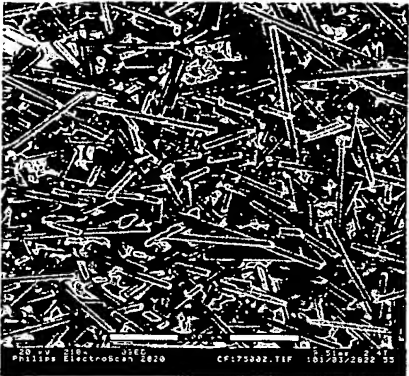
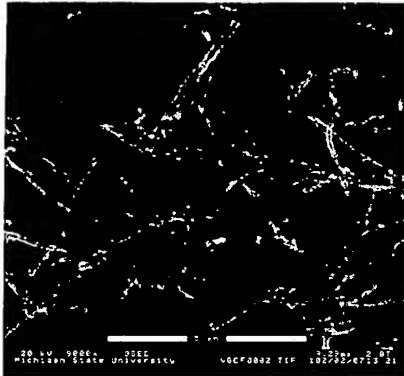


FIG. 18



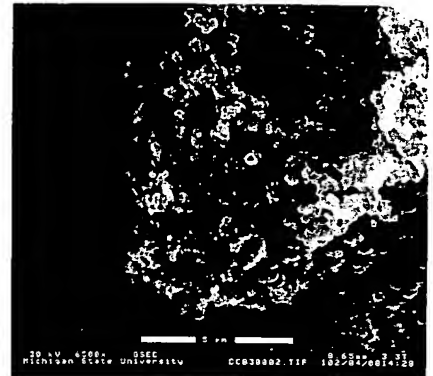
A: PAN based Carbon Fiber
(Scale Bar = 200μm)

FIG. 19



B: VGCF
(Scale Bar = 5μm)

FIG. 20



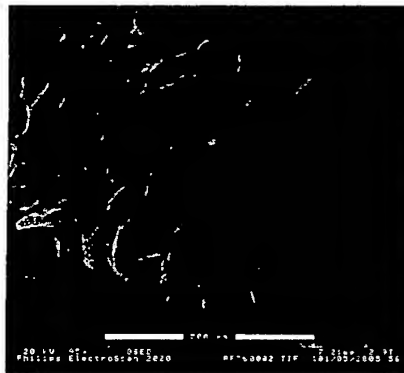
C: Carbon Black
(Scale Bar = 5μm)

FIG. 21



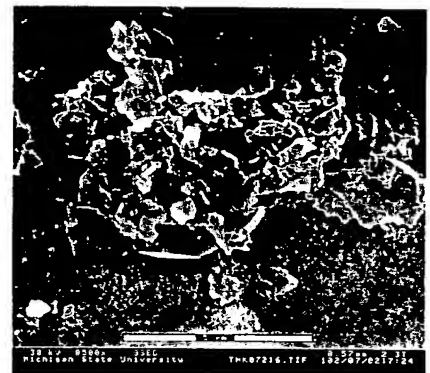
A: As-received Graphite
(Scale Bar=300 μm)

FIG. 22



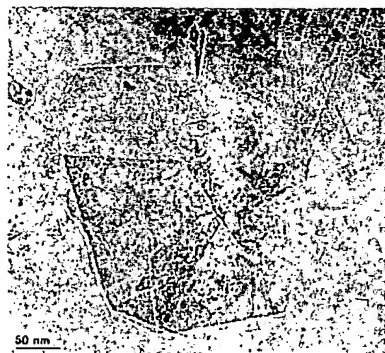
B: Expanded Graphite
(Scale Bar=500 μm)

FIG. 23



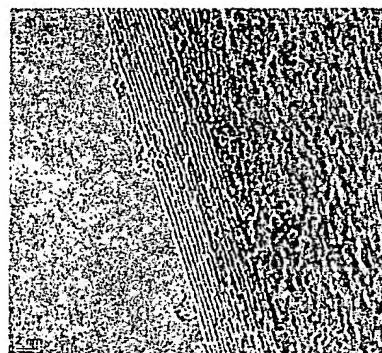
C: Pulverized Graphite
(Scale Bar=5 μm)

FIG. 24



A: Scale Bar=50 nm

FIG. 25



B: Scale Bar=2 nm

FIG. 26

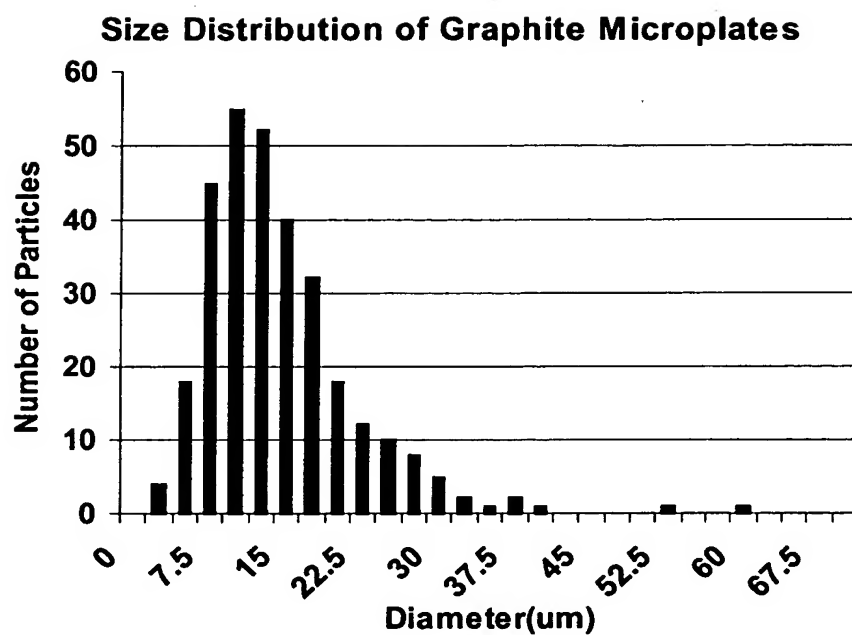


FIG. 27

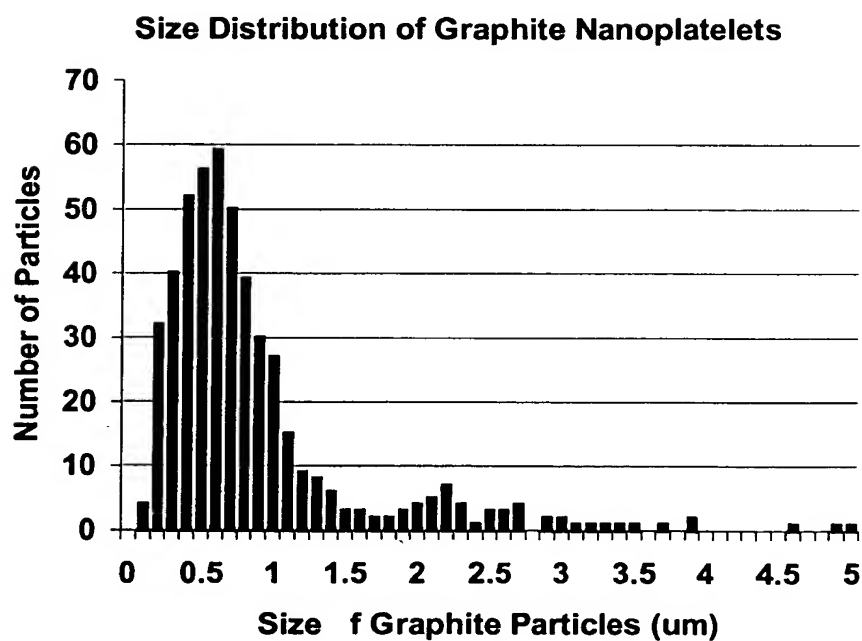


FIG. 28

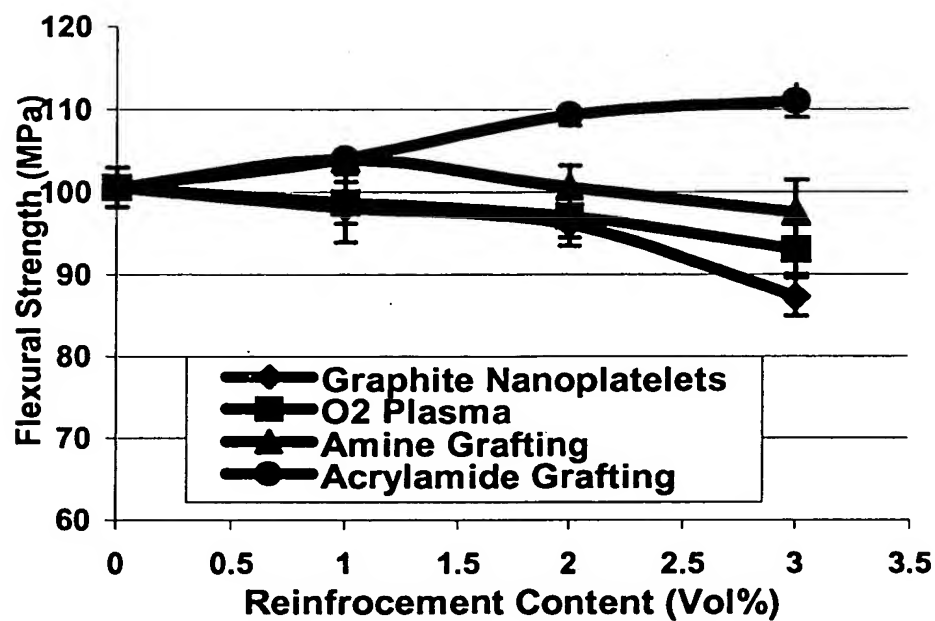


FIG. 29

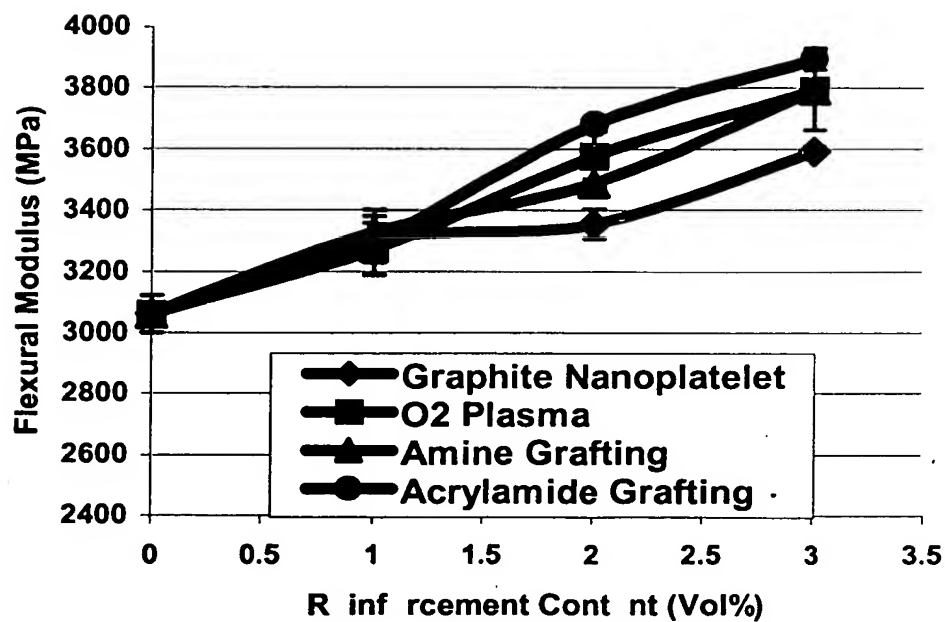


FIG. 30

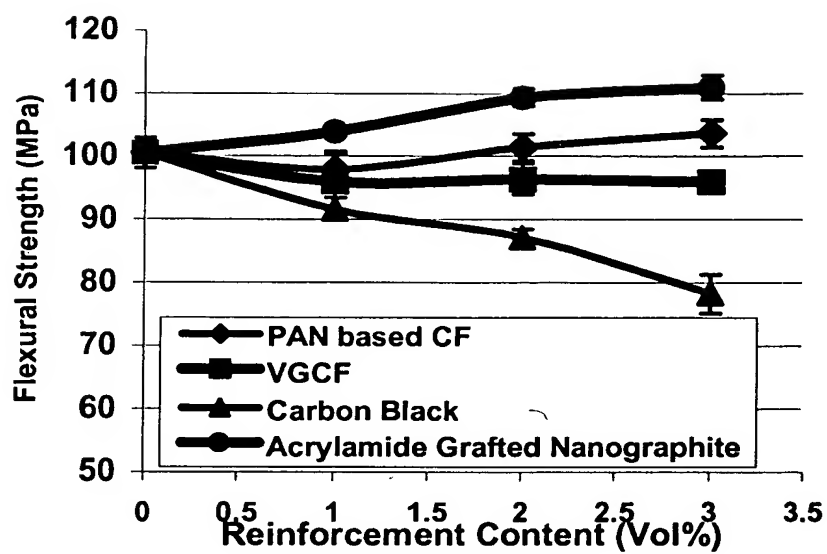


FIG. 31

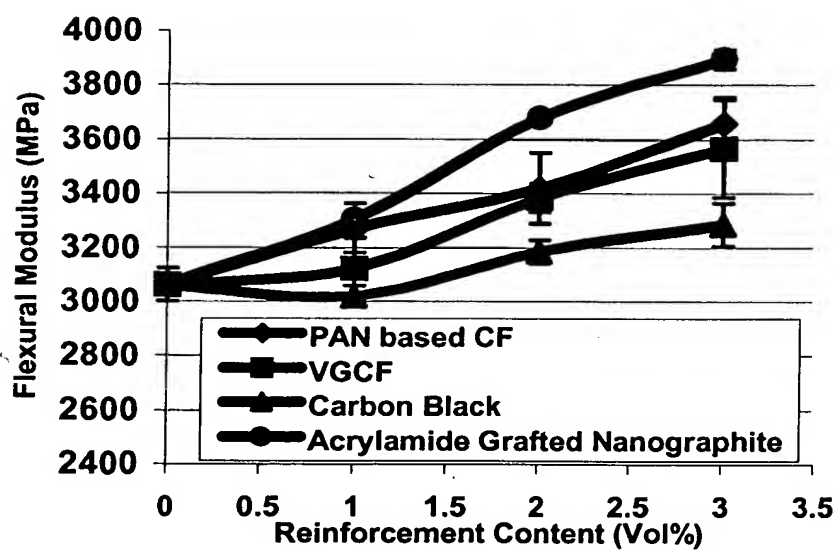


FIG. 32

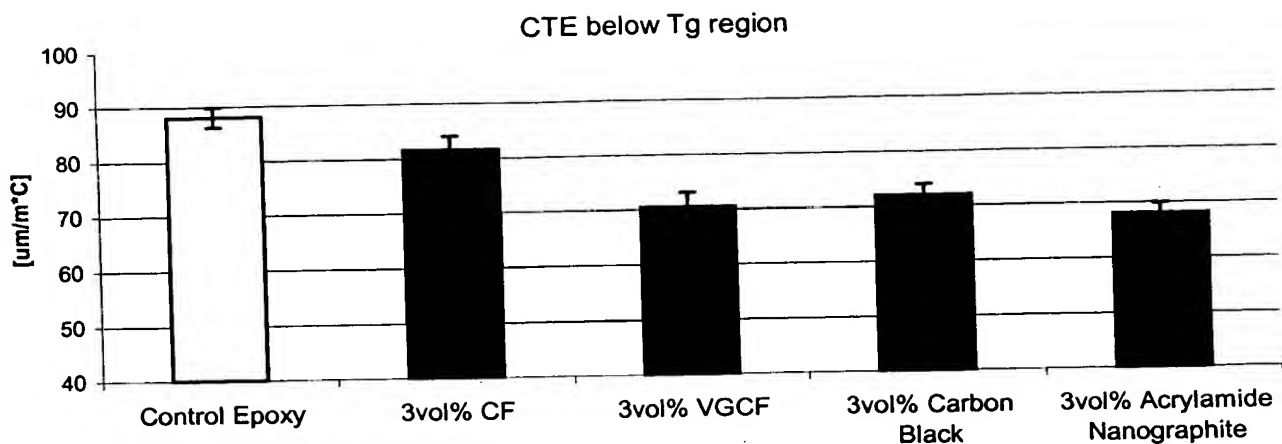


FIG. 33

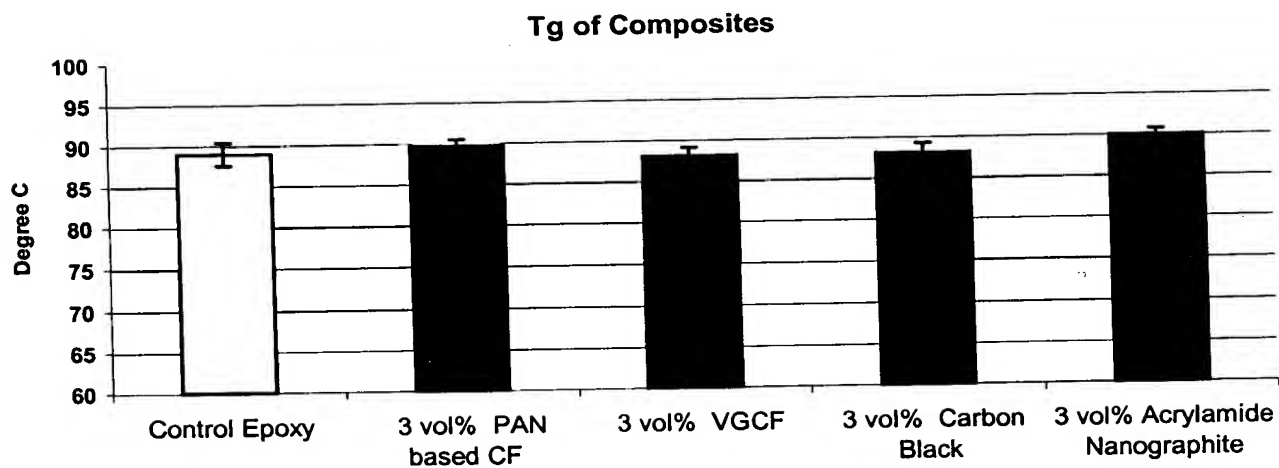


FIG. 34

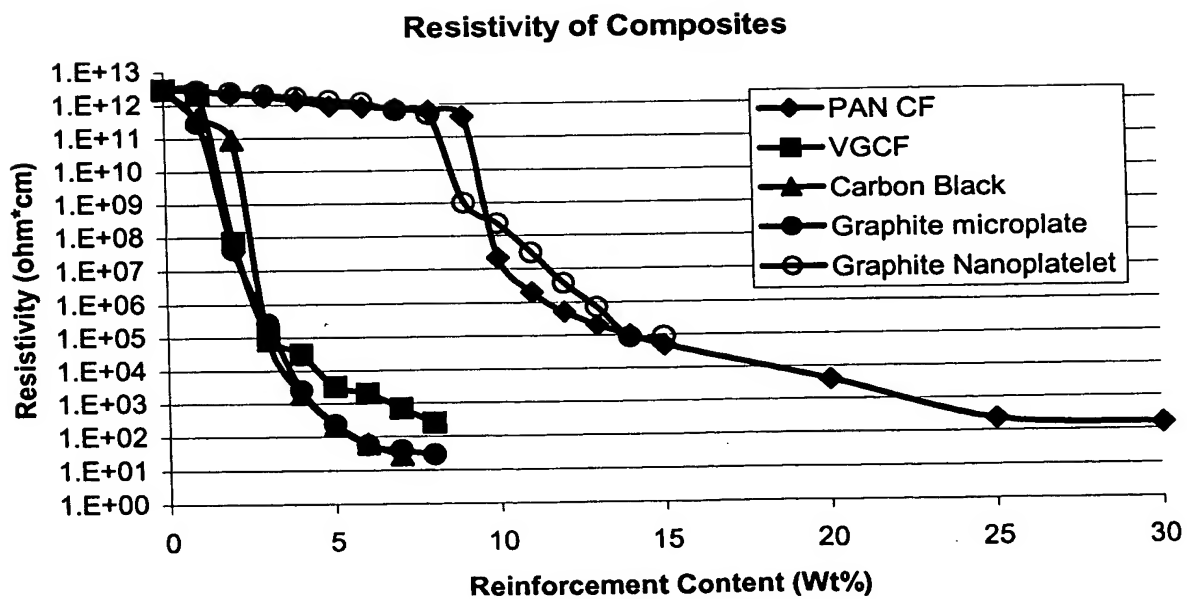


FIG. 35

Resistivity of Composites Comparison to Other Carbon Materials

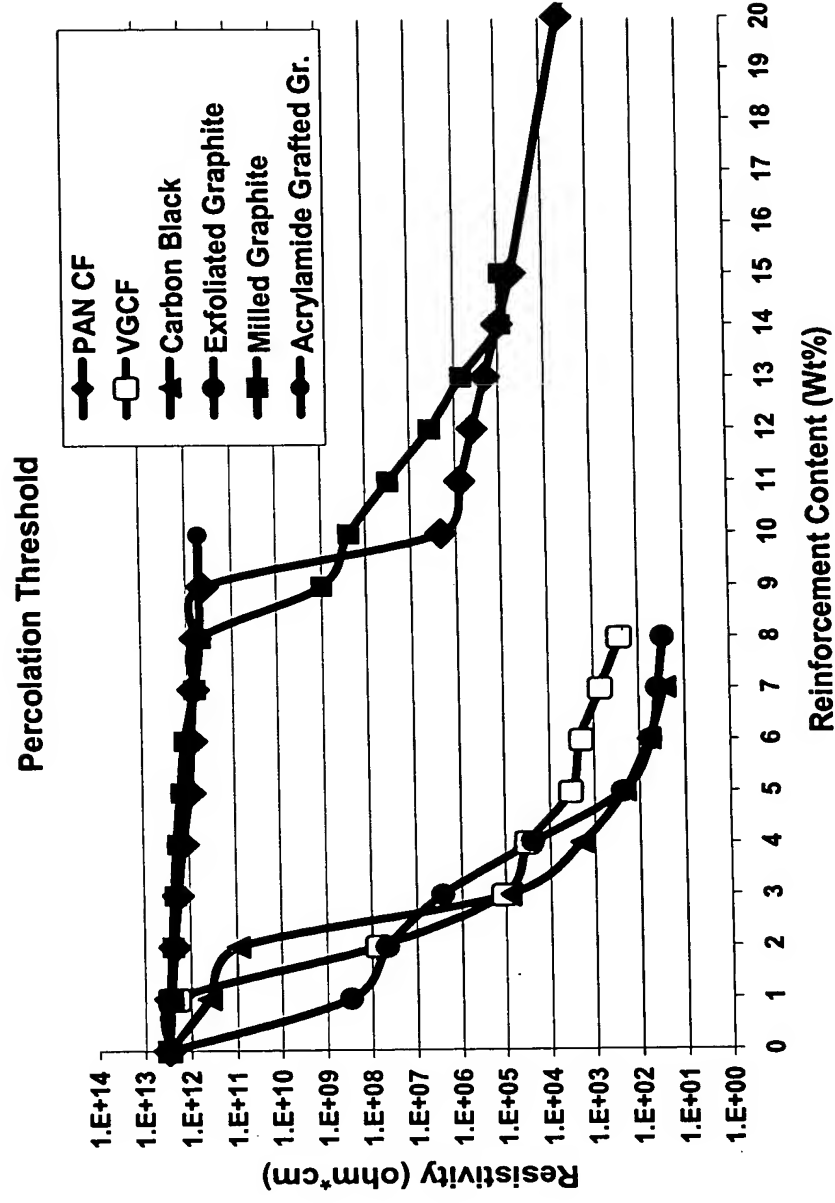


FIG. 36

Impact Strength of Composites

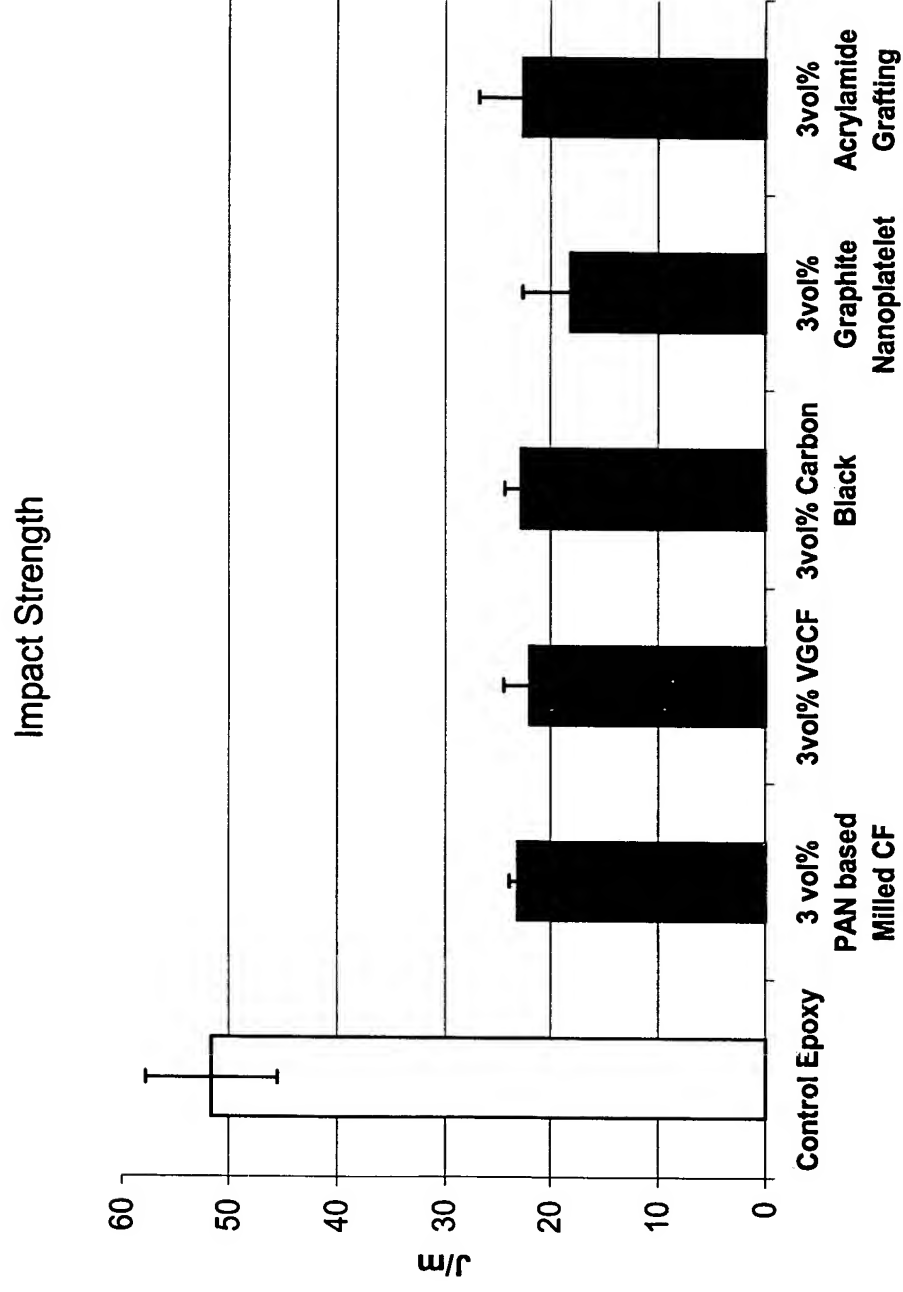


FIG. 37

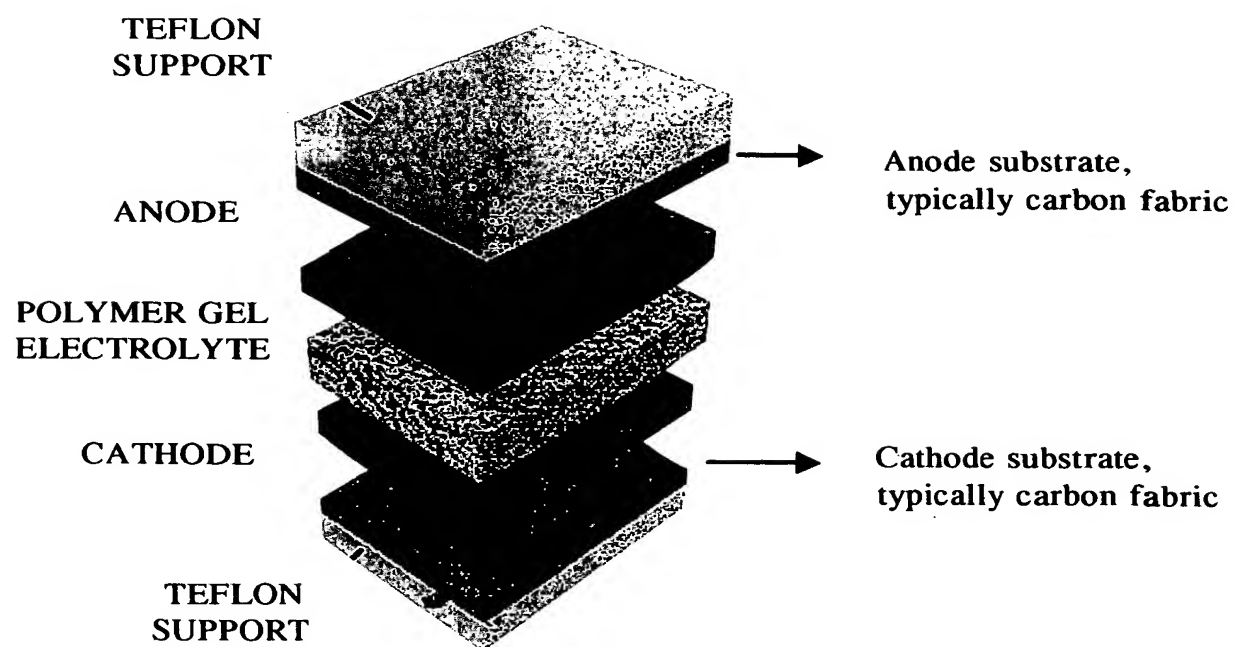


FIG. 38

FIG. 39

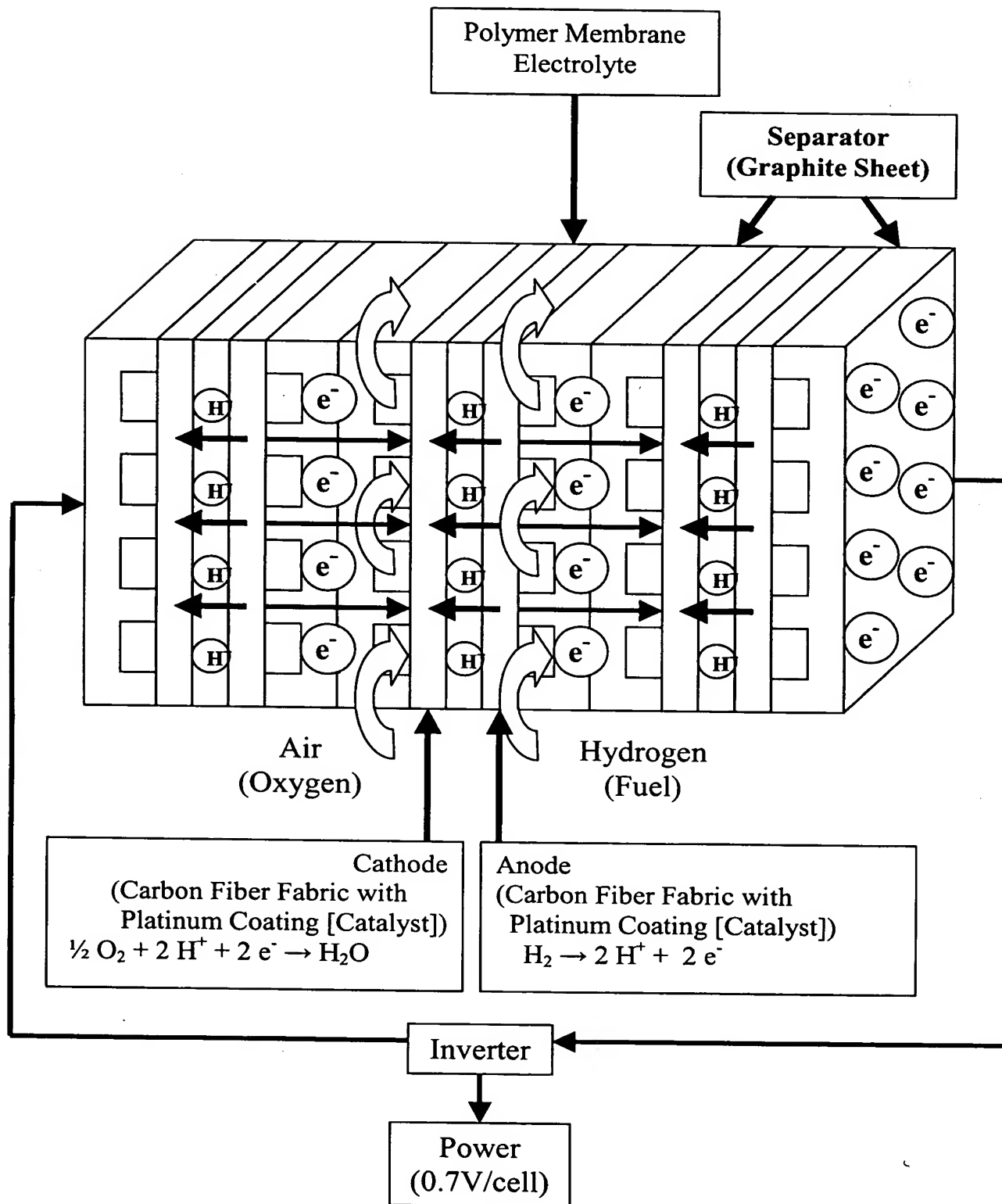


FIG. 40

